

**UNIMORE – Department of Biomedical, Metabolic and Neural Sciences**  
**PhD Philosophy Programs in ‘Clinical and Experimental Medicine’ and ‘Neuroscience’ (in**  
**collaboration with ‘Molecular and Regenerative Medicine’ Program)**

**Spring School “Principles of biomedical research methods”**

Marola Abbey (Reggio Emilia), April 15-19, 2024

Dario Consonni, Fondazione IRCCS Ca’ Granda Ospedale Maggiore Policlinico, Milan, Italy  
 Lauren Wise, Boston University School of Public Health Epidemiology, Boston (MA), USA

<b>15 April 2024</b>	
<b>AM</b>	<b>Lauren Wise</b>
09.00-11.00	Study design. Measures of disease frequency. Measures of association (relative and absolute measures)
11.00-11.15	<i>Coffee break</i>
11.15-13.00	Validity and efficiency + Sources of bias and misclassification + Introduction to confounding (tips for predicting direction and magnitude of confounding)
13.00-14.30	<i>Lunch</i>
<b>PM</b>	<b>Dario Consonni</b>
14.30-16.30	Statistics vs Epidemiology. Time-dependent variables and the central role of rate Beware of age at diagnosis.
16.30-16.45	<i>Coffee break</i>
16.45-18.30	Classical regression models: linear, logistic, log-binomial, Poisson, and Cox regression. Approaches for selecting potential confounders.
<b>16 April 2024</b>	
<b>AM</b>	<b>Dario Consonni</b>
09.00-11.00	. Directed Acyclic Graphs (DAG).
11.00-11.15	<i>Coffee break</i>
11.15-13.00	Role of variables: exposure, outcomes, confounders, effect modifiers, mediators, synergistic factors, colliders.
13.00-14.30	<i>Lunch</i>
<b>PM</b>	<b>Lauren Wise</b>
14.30-16.30	How to critique a peer-reviewed journal article – read article while addressing critique questions – come to class the next day prepared to discuss (no need to submit written responses).
16.30-16.45	<i>Coffee break</i>
16.45-18.30	Small group discussions about assigned reading.
<b>17 April 2024</b>	
<b>AM</b>	<b>Lauren Wise</b>
09.00-11.00	Special topics (Part I) 1) Immortal person-time bias + in-class exercise (60 minutes) 2) Principles of peer review (60 minutes)
11.00-11.15	<i>Coffee break</i>
11.15-13.00	Special topics (Part II): 3) How to write a scientific paper – Ken Rothman’s recommendations
13.00-14.30	<i>Lunch</i>
<b>PM</b>	<b>Dario Consonni</b>
14.30-16.30	Not only increased risk: RAP (Risk Advancement Period). Panel studies and models for correlated outcomes.
16.30-16.45	<i>Coffee break</i>
16.45-18.30	Time-varying confounders affected by previous exposure: the importance of G-models

	<b>18 April 2024</b>
<b>AM</b>	
09.00-15.00	CAI-guided hiking tour at Pietra di Bismantova
15.30-16.00	<i>PhD Quality Assurance meeting</i>
<b>PM</b>	<b>Marco Vinceti</b>
16.00-17.00	Methodology in result reporting and interpretation to assess causal relations
	<b>Valentina Serafin</b>
17.00-18.00	Methodology in biomedical & laboratory science research
	<b>19 April 2024</b>
<b>AM</b>	<b>Roberto D'Amico</b>
09.30-11.00	Basics inferential statistics + ANOVA
	<b>Cinzia Del Giovane</b>
11.00-12.15	Meta-analysis and network meta-analysis
	<b>Tommaso Filippini</b>
12.15-13.00	Dose-response meta-analysis
<i>13.00-14.30</i>	<i>Lunch</i>

